STATEMENT OF GRACE MARROQUIN, PRESIDENT
MARROQUIN INTERNATIONAL ORGANIC COMMODITIES SERVICES, INC.
BEFORE NATIONAL ORGANIC STANDARDS BOARD,
WASHINGTON, D.C., AUGUST 15, 2005,
ON HANDLING COMMITTEE RECOMMENDATION
RELATIVE TO "AGRICULTURAL" AND "NONAGRICULTURAL" SUBSTANCES

My name is Grace Marroquin, President of Marroquin International Organic Commodities Services, Inc. My company is based in Santa Cruz, California, and we supply organic ingredients for the food industry.

I am here once again to request that the Board recommend the classification of yeast as an "agricultural product." Yeast is currently listed under Section 205.605(a) as a non-synthetic nonagricultural substance. Over a year ago, on July 30, 2004, we filed our request with the Board that it recommend that yeast be transferred from Section 205.605(a) to Section 205.606 as an "agricultural product." Our request is still pending.

Here is the problem. Processed food products are being labeled and sold as "organic" that contain conventional yeast instead of organic yeast. Even though organic yeast is fully available, it cannot be officially recognized as an organic ingredient, and required in products with an "organic" label. Organic yeast cannot be officially recognized until yeast itself is re-classified as an "agricultural product."

Organic yeast is the only organic ingredient that is available in the market today that cannot be recognized as a required organic ingredient. All we are asking is that this Board allow organic yeast to have the same status as other organic ingredients.

We hoped one year ago that when we brought this to the Board's attention, we would see prompt action from the Board. We pointed out that there is direct precedent for what we have been seeking from the Board. In 2000, before the Final Rule was adopted, the Board requested that the Department reclassify seven materials on the National List from "nonagricultural" to "agricultural." The Department complied with this Board's request in the case of five of the materials. In the Final Rule the Department placed these five substances on the National List as "agricultural products"—cornstarch, gums, kelp, lecithin and pectin.

But for our yeast request, we have had to wait, and we are still waiting. Since filing this request, I have traveled to Washington to address the Board at each of the last three meetings: in October 2004, in March of this year, and now at this meeting.

Now I would like to turn to the latest roadblock that we have encountered. This is the Handling Committee's paper that is coming before this Board at this meeting. This "Proposed Guidance Document" concludes that yeast cannot be classified as "agricultural."

Before I discuss the merits of this conclusion, I first want to explain what it would mean if the Board approves this Guidance Document.

- To produce yeast in the conventional way involves ammonia, sulfuric acid, caustic soda lye, synthetic vitamins and a synthetic antifoaming agent. It requires rinsing twice and this generates contaminated wastewater that has to be treated. The process to manufacture organic yeast uses no chemicals and produces no chemically contaminated wastewater. In an Appendix to this statement, we present a detailed picture of the role of chemicals in making conventional yeast.

- If the Board adopts this Guidance Document, it would set the Board's policy that conventional yeast, not organic yeast, should be the standard yeast in processed products that bear the "organic" label. This would be in direct conflict with the goal of organic integrity.

- Organic yeast could not be required as an ingredient in the last 5% in organic processed foods. Nor could it be required in any organic product. Organic processors who would choose to use organic yeast could not count it toward their organic ingredient content in aiming for the 70% or 95% threshold.

- Since organic yeast is certified in Europe and Japan and is used in organic processed foods there, non-recognition of organic yeast by the NOP would remain a barrier to "equivalency" and a restriction to free organic trade.

- When organic yeast is manufactured, this creates demand for organic grain for the nutrient substrate.

I will turn now to the finding of the committee that while mushrooms and yeast are both fungi, yeast is not agricultural. There is no justification for this. If yeast is not agricultural, mushrooms cannot be agricultural. The Guidance Document rests on the distinction that mushrooms produce fruiting bodies and yeast reproduces by budding. Several members of the scientific community have submitted comments pointing out that this is a "distinction without a difference." Here is a sampling of their comments:

- Yeast can reproduce sexually, as can mushrooms. Yeasts, like mushrooms, can even produce fruiting bodies. (Professor Dr. Jean-Claude Hubert, former Chair of the Microbiology Department of the University of Strasbourg.)

- Algae, like yeast, are single-celled organisms. Algae, like yeast, are grown in a solution. Both algae and yeast can be and are grown in closed tank solutions. So how can algae be considered "agricultural" and yeast as "nonagricultural"? (Susan Ulery, Director of Regulatory Affairs, The Synergy Company of Utah, LLC).

- Many fungi that form mushrooms can also express themselves in the form of yeast. Examples are the Cordyceps mushroom and the Jelly mushroom. Yeasts are a simpler form of the life cycle of these mushrooms. Like beads on a string, these mushrooms can disassemble themselves from their mycelial form (filaments) into their one-cell form. So to call yeasts a non-agricultural product would logically require that mushrooms be called non-agricultural. This approach "does not pass the common-sense test, and is scientifically

insupportable." (Paul Stamets, author of six books and several scholarly articles on mushrooms, and founder of Fungi Perfecti, LLC, Olympia, Washington, a certified organic supplier of gourmet and medicinal mushroom products.)

- Mushrooms have edible mycelia (filaments) that coalesce into the fruiting body. These are just one cell in thickness, and edible yeasts are single celled. The fact that one type of edible fungi is linear and another single celled is hardly a biological distinction that should fix the organic status of yeast. (Thomas M. Newmark, President, New Chapter, Inc., manufacturer of whole-food supplements.)

More than a dozen individuals have filed comments in opposition to the yeast decision. The "606" Task Force of the Organic Trade Association is also opposed to treating yeast as a "nonagricultural" substance.

These comments come from ingredient suppliers, manufacturers of finished products, certifiers, scientists and consultants. These are people with deep roots in the organic movement. They have the best interests of the organic community at heart. They are unanimous in telling this Board that a decision to declare yeast non-agricultural would not be well founded in science and would be a setback to the organic agenda.

As one who has waited now for over a year to have this Board act on yeast, I think it is now time to have yeast declared an "agricultural product" under Section 205.606.

APPENDIX

THE ROLE THAT CHEMICALS PLAY IN PRODUCTION OF CONVENTIONAL YEAST, AND THE COMPARISON WITH HOW ORGANIC YEAST IS MADE

The manufacturer of organic yeast in Germany is Agrano GmbH & Co KG, in Riegel am Kaiserstuhl, a small town near Freiburg. Agrano has worked for many years to develop Bioreal® organic yeast because of the view held in Europe that the various chemicals used in cultivating yeast microorganisms in conventional yeast production were not compatible with organic farming or food processing. An organic research article in 2002 cited Agrano's role as a pioneer in finding "totally new methods for the technical production of yeast." [1]

Yeast microorganisms are cultivated and propagated in nutrient media, or substrates. The research article noted that in conventional yeast production, the substrates might be materials of agricultural origin, such as molasses, but in the production of the yeast, they are exposed to numerous synthetic chemicals.

> …[I] n yeast production the main source of carbon used is molasses, a byproduct of sugar production. As molasses is mainly made up of carbon, the yeast grows best if phosphorus and nitrogen are added during the production process. Ammonia, or ammonium sulphate or nitrate, is normally used as a source of nitrogen, while monoammonium or diammonium phosphate is usually used as the source of phosphorous. In addition, a series of further substances are used to control the PH value (sulfuric acid, sodium hydroxide) as anti-foaming agents, and so on. Micronutrients such as synthetic vitamins are also used to boost growth. [2]

This article further points out that the yeast product must be rinsed twice, and that the resulting wastewater is not easily degradable. He concludes, "These substances are not compatible with the view of food production held by the organic farming community." [3]

Organically produced yeast avoids the heavy involvement of chemicals that the article describes. Agrano provides the following detailed information:

- A substrate of molasses as a sugar source would require the addition of nitrogen and phosphorus. Organic yeast starts out with a substrate of organically farmed grain that does not need these chemicals to be introduced.

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[1] Alexander Beck, Research Institute of Organic Agriculture (FiBL), Berlin, "Starter Cultures – To Be Allowed as a Matter of Course!?" September 18, 2002, at p. 6.
[2] Beck, pp. 2-3
[3] Beck, p. 3

- The nitrogen source is organically farmed grain and brewer's yeast, instead of ammonia.

- Conventional yeast relies on sulfuric acid and lyes such as caustic soda lye to regulate the pH. With organic yeast, there is no need to regulate the pH level.

- In organic yeast, the natural medium provides sufficient growth enhancement so that no synthetic vitamins or mineral salts are needed for that purpose. .

- Instead of a synthetic antifoaming agent, organic yeast uses organically farmed sunflower oil.

- Rinsing is necessary twice in conventional yeast production. In organic yeast production, because no chemicals have been used, rinsing is unnecessary.

- The end of the conventional yeast production process yields wastewater, which must be treated before disposal. The byproducts in organic yeast production are simply used as raw material for a new production cycle.

Thus, organically produced yeast should not be seen as a frill or gimmick, but instead as a technological contribution to the advancement of organic food processing. Organically produced yeast exposes the fact that the manufacture of conventional yeast unnecessarily utilizes so many chemicals and unnecessarily results in wastewater that requires treatment before it can be released. When the production methods and materials of conventional yeast and organic yeast are compared, side-by-side, this demonstrates that conventional yeast is not consistent with organic farming and handling.